STIC Search Report
EIC 1700

STIC Database Tracking Number: 207551

TO: Elizabeth Robinson
Location: REM 6A34
Art Unit : 1773
November 20, 2006

Case Serial Number: 10/826565

From: Mei Huang
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-3952
Mei.huang@uspto.gov

Search Notes

Examiner Robinson,

Please feel free to contact me if you have any questions or if you would like to refine the search query,

Thank you for using STIC services!

Mei Huang

Banks, Kendra 207551

From: ELIZABETH ROBINSON [Elizabeth.Robinson@uspto.gov]
Sent: Wednesday, November 15, 2006 4:00 PM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10826565

SCIENTIFIC REFERENCE BR
Sci & Tech Inf · Cntr
NOV 16 RECD
Pat. & T.M Office

Requester:
ELIZABETH ROBINSON (P/1773)
Art Unit:
GROUP ART UNIT 1773
Employee Number:
83081
Office Location:
REM 06A34
Phone Number:
(571)272-7129
Mailbox Number:

Case serial number:
10826565
Class / Subclass(es):

Earliest Priority Filing Date:
4/16/2004
Format preferred for results:
E-mail
Search Topic Information:
In Claim 1 of application 10/826,565, two compounds are specified, MO(OOH).sub.x and M (OOH).sub.y, where M is a metal and x and y are 2, 3, 4, or 6. I am trying to find out what the proper chemical name of these substance are particularly for the metal Titanium (Ti) and with the subscripts 2 and 4. If information cannot be found with titanium as the metal, the other preferred metals in the application were Platinum (Pt), Selenium (Se), Tin (Sn), Zirconium (Zr), and Halfnium (Hf). I am also interested in any known properties of these compounds particularly color and most particularly with particle sizes in the nanoparticle range of less than 10 nanometers.
Special Instructions and Other Comments:
You can reach me by email or by phone 2-7129. My usual hours are from 8 to 4:30 if morning traffic wasn't too bad.

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Alexandria, Virginia 22313-1450
www.uspto.gov

Bib Data Sheet

CONFIRMATION NO. 2117

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/826,565	04/16/2004 RULE	428	1773	620-011776-US (PAR)

APPLICANTS

John W. Andrews, Madison, CT;

** **CONTINUING DATA** *************************

** **FOREIGN APPLICATIONS** ********************

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 06/28/2004

	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed ☐ yes ☐ no 35 USC 119 (a-d) conditions met ☐ yes ☐ no ☐ Met after Allowance Verified and Acknowledged ____ Examiner's Signature ____ Initials	CT	0	101	3

ADDRESS
2512

TITLE

Metal peroxide films

FILING FEE RECEIVED		
2358	FEES: Authority has been given in Paper No. __________ to charge/credit DEPOSIT ACCOUNT No. __________ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other __________ ☐ Credit

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact***:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

```
=> fil reg
FILE 'REGISTRY' ENTERED AT 19:09:14 ON 17 NOV 2006
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=> d his nofile

     (FILE 'HOME' ENTERED AT 11:45:25 ON 17 NOV 2006)

     FILE 'HCAPLUS' ENTERED AT 11:45:35 ON 17 NOV 2006
L1            1 SEA US2005234178/PN

     FILE 'REGISTRY' ENTERED AT 11:46:38 ON 17 NOV 2006
L2           43 SEA (12030-85-2/BI OR 12036-10-1/BI OR 12047-27-7/BI OR
L3            1 SEA 866891-24-9/RN
L4            1 SEA 866891-06-7/RN
L5            1 SEA 866891-20-5/RN
L6            1 SEA 866891-18-1/RN
L7            1 SEA 866891-16-9/RN
L8            1 SEA 866891-14-7/RN
L9            1 SEA 866891-13-6/RN
L10           1 SEA 866891-12-5/RN
L11           1 SEA 866891-11-4/RN
L12           1 SEA 54615-43-9/RN
L13           1 SEA 866891-26-1/RN
L14           1 SEA 866891-10-3/RN
L15           1 SEA 866890-99-5/RN
L16           1 SEA 866891-00-1/RN
L17           1 SEA 866891-01-2/RN
L18           1 SEA 866891-02-3/RN
L19           1 SEA 866891-03-4/RN
L20           1 SEA 866891-04-5/RN
L21           1 SEA 866891-05-6/RN
L22           1 SEA 866891-06-7/RN
L23           1 SEA 866891-07-8/RN
L24           1 SEA 866891-08-9/RN
L25           1 SEA 866891-09-0/RN

     FILE 'HCAPLUS' ENTERED AT 14:05:04 ON 17 NOV 2006
L26          14 SEA (L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR L9 OR L10 OR
                L11 OR L12 OR L13)
L27           2 SEA (L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR
                L21 OR L22 OR L23 OR L24 OR L25)
L28           1 SEA L26 AND L27

     FILE 'REGISTRY' ENTERED AT 14:13:11 ON 17 NOV 2006
L29      299424 SEA (T1 OR T2 OR T3 OR LNTH)/PG (L) 3/ELC.SUB
L30     2895210 SEA (A3 OR A4 OR A6)/PG (L) 3/ELC.SUB
L31      136641 SEA (L29 OR L30) AND 1-6/H AND 2-12/O
L32          25 SEA L2 AND L31

     FILE 'HCAPLUS' ENTERED AT 14:34:56 ON 17 NOV 2006
L33     1649565 SEA L31
L34             QUE METAL(2A)PEROXIDE#
L35          15 SEA (L26 OR L27) AND L33
L36         588 SEA L33 AND L34
L37             QUE SOLUTION# OR SOLN#
L38         203 SEA L36 AND L37
```

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L39       167973 SEA NANOPARTICL? OR NANOPARTICULAT? OR NANOSCAL? OR
                 NANOSTRUCTURE? OR NANOCHEM? OR NANOSIZ? OR NANOTUB? OR
                 NANOMATERIAL? OR NANO(A)(PARTICL? OR PARTICULAT? OR
                 SCAL? OR STRUCTURE? OR CHEM? OR SIZ? OR TUB? OR MATERIAL?
                 )
L40            2 SEA L38 AND L39
L41            4 SEA L36 AND L39
L42              QUE PROCESS? OR METHOD# OR MANUFACTUR? OR MFR# OR
                 PRODUC? OR MAKE OR MAKES OR MADE OR MAKING OR PREPAR? OR
                 PREPD# OR PROCEDURE#
L43          155 SEA L38 AND L42
L44          106 SEA L34(5A)L37
L45           22 SEA L43 AND L44

     FILE 'REGISTRY' ENTERED AT 15:51:48 ON 17 NOV 2006
L46         4450 SEA M/ELS AND PEROXIDE#
L47          360 SEA L46 AND H/ELS AND 3/ELC.SUB
L48          239 SEA L46 AND 2/ELC.SUB
L49          599 SEA L47 OR L48
L50         1024 SEA M/ELS AND ?HYDROPEROXY?/CNS
L51           84 SEA L50 AND 3/ELC.SUB

     FILE 'HCAPLUS' ENTERED AT 15:57:17 ON 17 NOV 2006
L52       173025 SEA L49
L53           67 SEA L51
L54         8662 SEA (L52 OR L53) AND L39
L55         1856 SEA L54 AND L37
L56            1 SEA L55 AND L44
L57            1 SEA L55 AND L34
L58              QUE (AQ# OR AQUEOUS? OR H2O OR WATER?)(2A)(SOLUTION? OR
                 SOLN#)
L59          536 SEA L54 AND L58
L60        43471 SEA ("COATING(S)"/CV OR COATINGS/CV)
L61       133630 SEA "COATING PROCESS"/CV
L62       285157 SEA "COATING MATERIALS"/CV
L63           40 SEA L59 AND (L60 OR L61 OR L62)
L64            4 SEA L40 OR L41
L65           21 SEA L45 NOT L64
L66           40 SEA L63 NOT (L64 OR L65)
L67           59 SEA L34(2A)(FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
                 OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILAYER?) OR SHEET?
                 OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR
                 VENEER? OR SHEATH? OR COVER? OR ENCAS? OR OVERSPREAD? OR
                 CLAD?)
L68           75 SEA L34(3A)(FILM? OR THINFILM? OR LAYER? OR OVERLAY? OR
                 OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILAYER?) OR SHEET?
                 OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR OVERCOAT? OR
                 VENEER? OR SHEATH? OR COVER? OR ENCAS? OR OVERSPREAD? OR
                 CLAD?)
L69            9 SEA L68 AND L58
L70            1 SEA L68 AND L39
L71           10 SEA L69 OR L70
L72            9 SEA L71 NOT L64
L73           40 SEA L66 NOT (L64 OR L72)
                 SEL L64 HIT RN
                 SEL L73 HIT RN
                 D L73 HITSTR
                 D L73 10 HITSTR
                 D L73 30 HITSTR
                 SEL L73 1-40 HIT RN
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     FILE 'REGISTRY' ENTERED AT 16:47:54 ON 17 NOV 2006
L74            2 SEA (13463-67-7/BI OR 1314-22-3/BI)
L75            2 SEA L74 AND L49
L76          598 SEA L49 NOT (13463-67-7/RN)

     FILE 'HCAPLUS' ENTERED AT 16:52:12 ON 17 NOV 2006
L77        17067 SEA L76
L78          944 SEA (L77 OR L53) AND L58
L79          176 SEA (L77 OR L53) AND L39
L80           13 SEA L78 AND L79
L81          500 SEA (L77 OR L53) AND (L60 OR L61 OR L62)
L82           35 SEA L81 AND L78
L83           13 SEA L81 AND L79
L84           25 SEA L80 OR L83
L85           18 SEA (L77 OR L53) AND L68
L86          827 SEA L76 (L) (SOLUTION? OR SOLN#)
                 D L80 KWIC 1-5

     FILE 'REGISTRY' ENTERED AT 17:03:45 ON 17 NOV 2006
L87              STR
L88           50 SEA SSS SAM L87
L89        10004 SEA SSS FUL L87
                 SAV L89 ROB565/A
L90          440 SEA L89 AND 2/ELC.SUB
L91          438 SEA L89 AND H/ELS AND 3/ELC.SUB
L92           10 SEA SE/ELS AND PEROXIDE#
L93            2 SEA L92 AND 3/ELC.SUB AND H/ELS
L94            0 SEA L92 AND 2/ELC.SUB
L95            4 SEA SE/ELS AND ?HYDROPEROXY?/CNS
L96            0 SEA L95 AND 3/ELC.SUB

     FILE 'HCAPLUS' ENTERED AT 17:13:56 ON 17 NOV 2006
L97         6409 SEA L47 OR L90 OR L91 OR L93 OR L95
L98          444 SEA L97 AND L58
L99           62 SEA L97 AND L39
L100           8 SEA L98 AND L99
L101         170 SEA L97 AND (L60 OR L61 OR L62)
L102          20 SEA L101 AND L98
L103           8 SEA L101 AND L99
L104          17 SEA L97 AND L68
L105         261 SEA (L47 OR L90 OR L91 OR L93 OR L95) (L) (SOLUTION? OR
                 SOLN#)
                 D KWIC 2-4
L106           5 SEA L105 AND L39
L107          97 SEA L105 AND L58
L108           4 SEA L107 AND (L60 OR L61 OR L62)
L109           7 SEA L107 AND SPRAY?
                 D KWIC 1-3
L110          54 SEA L100 OR L102 OR L103 OR L104 OR L106 OR L108 OR L109
L111          50 SEA L110 NOT (L64 OR L72)
                 SEL L111 HIT RN
                 D L64 IBIB ABS FHITSTR HITIND 1-4
                 D L72 IBIB ABS HITSTR HITIND 1-9
                 D L111 IBIB ABS HITSTR HITIND 1-50


     FILE 'REGISTRY' ENTERED AT 17:48:37 ON 17 NOV 2006
L112           6 SEA L93 OR L95
                 SAV L112 ROB565SE/A
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L113             STR L87
L114          50 SEA SUB=L89 SSS SAM L113
L115         988 SEA SUB=L89 SSS FUL L113
                 SAV L115 ROB565S4/A
L116         179 SEA L115 AND 3/ELC.SUB

     FILE 'HCAPLUS' ENTERED AT 18:21:30 ON 17 NOV 2006
L117         247 SEA L116
L118         564 SEA L47
L119          67 SEA L51
L120           4 SEA L93 OR L95

     FILE 'REGISTRY' ENTERED AT 18:36:20 ON 17 NOV 2006
L121          44 SEA M/ELS AND HO2 AND 3/ELC.SUB
L122          25 SEA L121 NOT HO/ELS

     FILE 'HCAPLUS' ENTERED AT 18:41:16 ON 17 NOV 2006
L123          22 SEA L122
L124           4 SEA (L117 OR L119 OR L120 OR L123) AND L39 ← Only 4 hits w/ nanoparticle? etc.
L125           1 SEA (L117 OR L119 OR L120 OR L123) AND L44 ← Only 1 hit w/ Metal peroxide soln's
L126          39 SEA (L117 OR L119 OR L120 OR L123) AND L58
L127           3 SEA (L117 OR L119 OR L120 OR L123) AND (L60 OR L61 OR
                 L62)
L128          19 SEA (L116 OR L51 OR L93 OR L95 OR L122) (L) (SOLUTION?
                 OR SOLN#)
L129          10 SEA L126 AND L128
L130          17 SEA L124 OR L125 OR L127 OR L129
L131           9 SEA L128 NOT L129


=> d l116 que stat
L87              STR

O-x-O       M 3
1   2

NODE ATTRIBUTES:
NSPEC   IS RC      AT   3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   3

STEREO ATTRIBUTES: NONE
L89        10004 SEA FILE=REGISTRY SSS FUL L87
L113             STR

O-x-OH      M 3
1   2

NODE ATTRIBUTES:
NSPEC   IS RC      AT   3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
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NUMBER OF NODES IS    3

STEREO ATTRIBUTES: NONE
L115          988 SEA FILE=REGISTRY SUB=L89 SSS FUL L113
L116          179 SEA FILE=REGISTRY L115 AND 3/ELC.SUB


=> fil hcap
FILE 'HCAPLUS' ENTERED AT 19:10:15 ON 17 NOV 2006
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=> d l124 ibib abs fhitstr hitind 1-4

L124 ANSWER 1 OF 4  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2005:1132948  HCAPLUS
DOCUMENT NUMBER:          143:391175
TITLE:                    Metal oxide peroxide films for adhesive
                          compositions coated on microparticle substrates
INVENTOR(S):              Andrews, John W.
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 16 pp.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND    DATE        APPLICATION NO.        DATE
     ---------------     ----    --------    --------------------
     --------
     US 2005234178        A1     20051020    US 2004-826565
                                                                    200404
                                                                    16
     WO 2005118694        A2     20051215    WO 2005-US12620
                                                                    200504
                                                                    13
     WO 2005118694        A3     20061026
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM,
             KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
             MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
             SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
             US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
             DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC,
             NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,
             GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.:                       US 2004-826565      A
                                                                    200404
                                                                    16
```

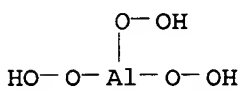
AB Adhesive coating compns. containing a metal peroxide (of group II and III metals) are used to produce clear colorless adhesive coatings on substrates, particularly micro-particulates. The **nanoparticle** coatings are chemical-active and function at a

high level of efficiency due to the high total surface area of the micro particulate substrate.

IT **54615-43-9**, Aluminum peroxide (Al(O2H)3)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

RN 54615-43-9 HCAPLUS

CN Aluminum peroxide (Al(O2H)3) (9CI) (CA INDEX NAME)



IC ICM C08K003-08

INCL 524439000; 428402000; 428702000; 428332000; 428403000

CC 57-2 (Ceramics)
Section cross-reference(s): 38, 67

ST titanium oxide peroxide adhesive coating **nanoparticle** substrate photocatalyst

IT Adhesive films
Bricks
Ceramics
Concrete
Leather
Masonry
Nanoparticles
Pigments, nonbiological
Skin
Textiles
Wood
(substrates; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

IT 1304-76-3, Bismuth oxide (Bi2O3), processes 1306-19-0, Cadmium oxide (CdO), processes 1306-38-3, Cerium oxide (CeO2), processes 1309-37-1, Ferric oxide, processes 1312-43-2, Indium oxide (In2O3) 1313-99-1, Nickel oxide (NiO), processes 1314-13-2, Zinc oxide (ZnO), processes 1314-23-4, Zirconium oxide (ZrO2), processes 1314-35-8, Tungsten oxide (WO3), processes 1314-61-0, Tantalum oxide (Ta2O5) 1317-39-1, Cuprous oxide, processes 7631-86-9, Silica, processes 12030-85-2, Potassium niobium oxide (KNbO3) 12036-10-1, Ruthenium oxide (RuO2) 12047-27-7, Barium titanate (BaTiO3), processes 12060-59-2, Strontium titanate (SrTiO3)
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**nanoparticles** in coating compns.; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

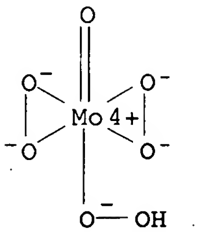
IT **54615-43-9**, Aluminum peroxide (Al(O2H)3) **866891-11-4** **866891-12-5** **866891-13-6**, Vanadium peroxide **866891-14-7**, Tin peroxide **866891-16-9**, Selenium peroxide **866891-18-1**, Platinum peroxide **866891-20-5** **866891-22-7** **866891-24-9** **866891-26-1**, Iron peroxide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

IT **866890-99-5**, Hafnium oxide peroxide **866891-00-1**, Zirconium oxide peroxide **866891-01-2**, Vanadium oxide peroxide **866891-02-3**, Tin oxide peroxide **866891-03-4**, Selenium oxide peroxide **866891-04-5**, Platinum oxide peroxide **866891-05-6**, Yttrium oxide peroxide **866891-06-7**, Lanthanum oxide peroxide **866891-07-8**, Scandium oxide peroxide **866891-08-9**, Aluminum oxide peroxide **866891-09-0**, Iron oxide peroxide **866891-10-3**, Titanium oxide peroxide
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(solns.; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

L124 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:532753 HCAPLUS
DOCUMENT NUMBER: 143:250515
TITLE: Preparation of nanocrystalline WO3 and MoO3 by different sol-gel methods
AUTHOR(S): Dimitriev, Y.; Iordanova, R.; Mancheva, M.; Klissurski, D.
CORPORATE SOURCE: University of Chemical Technology and Metallurgy, Sofia, 1756, Bulg.
SOURCE: Khimiya v Interesakh Ustoichivogo Razvitiya (2005), 13(2), 185-189
CODEN: KIURFI; ISSN: 0869-8538
PUBLISHER: Izdatel'stvo Sibirskogo Otdeleniya RAN
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Two sol-gel methods for the preparation of WO3 and MoO3 nanopowders were used in this work: (i) an ion-exchange reaction and (ii) an oxidizing reaction (M + H2O2). The phase and structural transformations undergone by colloidal solns. of tungsten acid (i) and peroxotungsten and peroxomolybdic acids (ii) as a function of thermal treatment were investigated by X-ray diffraction (XRD) and IR spectroscopy (IR). Depending on the methods used, different phases were obtained: crystalline hydrates, amorphous and nanocryst. products. The tungsten trioxide hydrates were prepared by the ion exchange method, crystallization in m-WO3 occurring above 300 °C. The tungsten sample being formed in the oxidizing reaction remained amorphous up to 300 °C; above 300 °C, m-WO3 crystallized The particle size of m-WO3 was 15 nm irresp. of the methods applied. IR anal. showed that amorphous tungsten network was built by distorted WO6 units without participation of peroxo groups (O-22). The preparation of MoO3 nanopowders by an oxidizing reaction was also studied. Crystallization of MoO3 was found to start earlier (200 °C), leading to completely crystallized o-MoO3 at 300 °C. The amorphous state of the product was detected at 100 °C only. Comparative anal. of the methods applied showed the oxidizing method to be more suitable for obtaining **nanoparticles**.

IT **45511-47-5**
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(preparation of nanocryst. WO3 and MoO3 by different sol-gel methods)
RN 45511-47-5 HCAPLUS
CN Molybdate(1-), (hydroperoxy)oxodiperoxy-, hydrogen (9CI) (CA INDEX NAME)



● H^+

CC 49-3 (Industrial Inorganic Chemicals)
IT **Nanoparticles**
Powders
(nanopowders; preparation of nanocryst. WO3 and MoO3 by different sol-gel methods)
IT 64-17-5, Ethanol, processes 64-19-7, Acetic acid, processes 7722-84-1, Hydrogen peroxide, processes 7783-03-1 13472-45-2 **45511-47-5** 129241-17-4
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(preparation of nanocryst. WO3 and MoO3 by different sol-gel methods)
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L124 ANSWER 3 OF 4 HCAPLUS
ACCESSION NUMBER: 2005:350825 HCAPLUS
DOCUMENT NUMBER: 143:51771
TITLE: Rational synthesis and optimization of multifunctional solid-state gas sensors
AUTHOR(S): Schwank, Johannes; Korotcenkov, Ghenadii
CORPORATE SOURCE: Department of, University of Michigan, Ann Arbor, MI, 48109-2136, USA
SOURCE: Materials Research Society Symposium Proceedings (2005), 828(Semiconductor Materials for Sensing), 153-160
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A new approach is discussed for the rational synthesis and development of optimized multifunctional solid-state gas sensors. Multifunctionality-the incorporation of multiple types of reactivities into a material, such as acid and/or base functionalities, oxidation and/or reduction functionalities, etc.-is a requirement in many gas sensing applications. The front end of many gas sensors contains catalytic layers, so that optimization of catalysts and optimization of gas sensors can be carried out in a synergistic fashion. Multifunctionality presents unique challenges to rational catalyst and sensor systems development because the overall performance of the material is a convolution of the performance of the various subcomponents, and optimization of these individual subcomponents in isolation does not necessarily lead to optimal, or even acceptable, overall performance. A major obstacle

to dealing with these difficulties is the inherent complexity of heterogeneous systems prepared by traditional approaches, which makes it difficult to unambiguously identify the compns. and morphologies of the local active sites and their interactions. Further complicating the problem is the requirement to function in environments that can vary on both short and long time scales. A key to understanding, controlling, and optimizing these materials is the ability to produce and study well-defined sensor materials with well-defined composition and morphol., with the flexibility to vary the composition easily without jeopardizing the structural uniformity. The development of new or improved materials for gas sensor applications requires a search for novel and innovative approaches to the **nano-scale** design of these materials. The use of the technol. of surface modification by successive ionic layer deposition (SILD) method is such an innovative approach that are discussed in this paper.

IT **12018-88-1DP**, Copper hydroxide peroxide ($Cu(OH)(O_2H)$), nonstoichiometric
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(rational synthesis and optimization of multifunctional solid-state gas sensors)

RN 12018-88-1 HCAPLUS

CN Copper hydroxide peroxide ($Cu(OH)(O_2H)$) (7CI, 9CI) (CA INDEX NAME)

HO— Cu— O— OH

CC 76-14 (Electric Phenomena)
Section cross-reference(s): 66, 79

IT Annealing
Electric resistance
Gas sensors
Grain size
Nanostructures
Oxidation
Surface structure
Surface treatment
(rational synthesis and optimization of multifunctional solid-state gas sensors)

IT 12016-80-7P, Cobalt hydroxide oxide CoOOH **12018-88-1DP**, Copper hydroxide peroxide ($Cu(OH)(O_2H)$), nonstoichiometric 20344-49-4P, Iron hydroxide oxide FeOOH
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(rational synthesis and optimization of multifunctional solid-state gas sensors)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L124 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:150374 HCAPLUS

DOCUMENT NUMBER: 135:16975

TITLE: Electron paramagnetic resonance study of honeybee Apis mellifera abdomens

AUTHOR(S): El-Jaick, Lea Jaccoud; Acosta-Avalos, Daniel; Motta de Souza Esquivel, Darci; Wajnberg, Eliane; Paixao Linhares, Marilia

CORPORATE SOURCE: Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, 180, Brazil
SOURCE: European Biophysics Journal (2001), 29(8), 579-586
CODEN: EBJOE8; ISSN: 0175-7571
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Although ferromagnetic material has been detected in Apis mellifera abdomens and identified as suitable for magnetic reception, phys. and magnetic properties of these particles are still lacking. ESR is used to study different magnetic materials in these abdomens. At least four iron structures are identified: isolated Fe3+, amorphous FeOOH, isolated magnetite **nanoparticles** of about 3 + 102 nm3 and 103 nm3 vols., depending on the hydration degree of the sample, and aggregates of these particles. A low-temperature transition (52-91 K) was observed and the temperature dependence of the magnetic anisotropy constant of those particles was determined These results imply that biomineralized magnetites are distinct from inorg. particles and the parameters presented are relevant for the refinement of magnetoreception models in honeybees.

IT **12299-70-6**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(ferromagnetic materials detection by ESR in honeybee Apis mellifera abdomens)

RN 12299-70-6 HCAPLUS
CN Iron(2+), (hydroperoxy)- (9CI) (CA INDEX NAME)

$^{3+}Fe-O^{-}-OH$

CC 12-1 (Nonmammalian Biochemistry)
IT 1309-38-2, Magnetite, biological studies **12299-70-6**
20074-52-6, Fe3+, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(ferromagnetic materials detection by ESR in honeybee Apis mellifera abdomens)

REFERENCE COUNT: 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l127 ibib abs fhitstr hitind 1-3

L127 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:216743 HCAPLUS
DOCUMENT NUMBER: 142:283684
TITLE: Nickel powder coated with titanium compound and electroconductive paste using the same
INVENTOR(S): Yoshida, Mitsugu; Ito, Takayuki
PATENT ASSIGNEE(S): Toho Titanium Co., Ltd., Japan
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

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     PATENT NO.          KIND    DATE        APPLICATION NO.          DATE
     ---------------     ----    --------    --------------------
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     WO 2005021189        A1     20050310    WO 2004-JP10799
                                                                      200407
                                                                      29
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR,
             KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
             MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
             SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
             VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
             DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
             PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
     JP 2005076074        A2     20050324    JP 2003-306966
                                                                      200308
                                                                      29
     TW 241227            B1     20051011    TW 2004-93125687
                                                                      200408
                                                                      27
PRIORITY APPLN. INFO.:                       JP 2003-306966      A
                                                                      200308
                                                                      29
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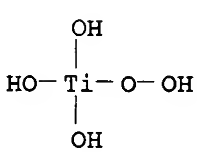
AB A Ni powder coated with a Ti compound is produced by treating a Ni powder with peroxotitanic acid. The process can be implemented after treating the Ni powder with a heterocyclic compound The Ni powder has a mean particle size of ≤1 μm and a BET surface area of 1-20 m2/g. The nickel powder is used to produce an elec. conductive paste with excellent sintering characteristics.

IT **13598-71-5**, Peroxytitanic acid (H4TiO5)
RL: NUU (Other use, unclassified); USES (Uses)
(nickel powder coated with titanium compound and electroconductive paste using the same)

RN 13598-71-5 HCAPLUS

CN Titanium hydroxide peroxide (Ti(OH)3(O2H)), (T-4)- (9CI) (CA INDEX NAME)



IC ICM B22F001-02

CC 56-6 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76

IT **Coating process**
Electrically conductive pastes
Powders
(nickel powder coated with titanium compound and electroconductive paste using the same)

IT **13598-71-5**, Peroxytitanic acid (H4TiO5)
RL: NUU (Other use, unclassified); USES (Uses)
(nickel powder coated with titanium compound and electroconductive paste using the same)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L127 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:45289 HCAPLUS
DOCUMENT NUMBER: 138:57562
TITLE: Self-cleaning antibacterial coating compositions
INVENTOR(S): Cui, Haixin; Qin, Zerong
PATENT ASSIGNEE(S): Puren Bio-Technology Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 9 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

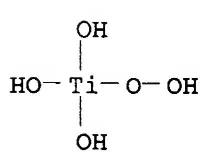
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1328095	A	20011226	CN 2000-109154	20000613
PRIORITY APPLN. INFO.:			CN 2000-109154	20000613

AB The composition useful for coating surfaces of substrates such as ceramics and metals, comprises a water-soluble colloid solution containing 0.25-10% titanium oxide photosemiconductive particles with particle diameter <50 nm and 0.13-4% peroxytitanic acid, wherein the ratio of TiO2 to H4TiO5 is 0.3-6. Thus, 10% titanium sulfate aqueous solution was hydrolyzed in the presence of NaOH for 30 min, and reacted with 500 mL aqueous solution containing 10.5 g H2O2 to give a colloid solution with TiO2 contenet 2% and H4TiO5 content 1%, which was coated on a glass surface and dried at 500° for 30 min, showing pencil hardness >9H, good transparency, adhesion, and antibacterial properties.

IT **13598-71-5P**, Peroxytitanic acid (H4TiO5)
RL: BUU (Biological use, unclassified); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(self-cleaning antibacterial coating compns.)

RN 13598-71-5 HCAPLUS

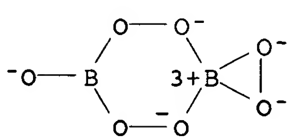
CN Titanium hydroxide peroxide (Ti(OH)3(O2H)), (T-4)- (9CI) (CA INDEX NAME)



IC ICM C09D001-00

ICS A01N025-00
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 55, 56, 58, 63
IT **Coating materials**
(bactericidal; self-cleaning antibacterial coating compns.)
IT 13463-67-7P, Titanium oxide, uses **13598-71-5P**,
Peroxytitanic acid (H4TiO5)
RL: BUU (Biological use, unclassified); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(self-cleaning antibacterial coating compns.)

L127 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:329205 HCAPLUS
DOCUMENT NUMBER: 120:329205
TITLE: Wear mechanism of Cr2O3 coating in inorganic salt solutions
AUTHOR(S): Wei, Jianjun; Xue, Qunji
CORPORATE SOURCE: Lanzhou Inst. Chem. Phys., Chin. Acad. Sci., Lanzhou, 730000, Peop. Rep. China
SOURCE: Wuji Cailiao Xuebao (1993), 8(1), 105-10
CODEN: WCXUET; ISSN: 1000-324X
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The friction and wear properties of Cr2O3 coatings in inorg. salt solns. were studied using a block-on-ring tester at ambient conditions. The friction coefficient is ranked from highest to lowest in the order: NaCl, NaNO3, Na2SO4, Na2B2O7, Na3PO4, for Na salt solns.; NaCl, MgCl2, AlCl3, for chloride salt solns. The wear volume of the block is ranked in descending order as follows: NaCl, Na2B2O7, Na3PO4, NaNO3, Na2SO4, for Na salt solns.; NaCl, AlCl3, MgCl2, ZnCl2, for chloride salt solns. The optical micrographs and XPS analyses of the worn surfaces indicate that the wear mechanism of Cr2O3 coating in inorg. salt solns. is a combination of several wear modes involving microfracture, tribochem. and abrasive wear.
IT **155606-94-3**
RL: MSC (Miscellaneous)
(friction and wear of chromia coatings in ag. solns. containing)
RN 155606-94-3 HCAPLUS
CN Borate(2-), [bis(hydroperoxy)hydroxyborato(3-)-κO0,κO0']peroxy-, disodium, (T-4)- (9CI) (CA INDEX NAME)



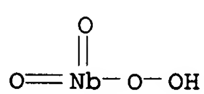
●2 Na+

CC 57-2 (Ceramics)
IT **Coating materials**
(chromia, friction and wear of, in inorg. salt solns.)
IT 7446-70-0, Aluminum trichloride, miscellaneous 7601-54-9, Sodium phosphate (Na3PO4) 7631-99-4, Nitric acid sodium salt,

miscellaneous 7646-85-7, Zinc dichloride, miscellaneous
7647-14-5, Sodium chloride (NaCl), miscellaneous 7757-82-6, Sodium
sulfate (Na2SO4), miscellaneous 7786-30-3, Magnesium dichloride,
miscellaneous **155606-94-3**
RL: MSC (Miscellaneous)
(friction and wear of chromia coatings in aq. solns. containing)

=> d l129 ibib abs fhitstr hitind 1-10

L129 ANSWER 1 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:647763 HCAPLUS
DOCUMENT NUMBER: 138:221221
TITLE: Synthesis of glutaraldehyde by selective oxidation of cyclopentene with **aqueous solution** of H2O2 catalyzed by peroxyniobic acid catalyst
AUTHOR(S): Chen, Hao; Deng, Jing-fa; Jiang, An-ren; Dai, Wei-lin; Fan, Kang-nian
CORPORATE SOURCE: Dept. of Chem., Fudan Univ., Shanghai, 200433, Peop. Rep. China
SOURCE: Fudan Xuebao, Ziran Kexueban (2002), 41(3), 317-319, 324
CODEN: FHPTAY; ISSN: 0427-7104
PUBLISHER: Fudan Daxue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
OTHER SOURCE(S): CASREACT 138:221221
AB Novel peroxyniobic acid catalyst was prepared with Nb2O5 as the precursor. In a system with alc. as solvent and aqueous H2O2 as oxidizer, the catalyst peroxyniobic acid can catalyze cyclopentene to prepare glutaraldehyde with high efficiency. Under optimal reaction condition, the conversion of cyclopentene is up to 100% and the yield of glutaraldehyde is up to 72%.
IT **23078-02-6P**, Peroxyniobic acid
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of glutaraldehyde by selective oxidation of cyclopentene with **aqueous solution** of H2O2 catalyzed by peroxyniobic acid catalyst)
RN 23078-02-6 HCAPLUS
CN Niobium oxide peroxide (NbO2(O2H)) (9CI) (CA INDEX NAME)



CC 23-14 (Aliphatic Compounds)
Section cross-reference(s): 21
IT Oxidation
Oxidation catalysts
(oxidation of olefins with **aqueous solution** of H2O2 catalyzed by peroxyniobic acid)
IT Alkenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of olefins with **aqueous solution** of H2O2 catalyzed by peroxyniobic acid)
IT Aldehydes, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)
(oxidation of olefins with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid)

IT 100-42-5, Styrene, reactions 110-83-8, Cyclohexene, reactions 592-41-6, Hexene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of olefins with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid)

IT 100-52-7P, Benzaldehyde, preparation 110-62-3P, Pentanal 1072-21-5P, Hexanedial
RL: SPN (Synthetic preparation); PREP (Preparation)
(oxidation of olefins with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid)

IT 142-29-0, Cyclopentene
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of glutaraldehyde by selective oxidation of cyclopentene with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid)

IT 1313-96-8, Niobium oxide 7722-84-1, Hydrogen peroxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of glutaraldehyde by selective oxidation of cyclopentene with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid catalyst)

IT **23078-02-6P**, Peroxyniobic acid
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of glutaraldehyde by selective oxidation of cyclopentene with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid catalyst)

IT 111-30-8P, Glutaraldehyde
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of glutaraldehyde by selective oxidation of cyclopentene with **aqueous solution** of H_2O_2 catalyzed by peroxyniobic acid catalyst)

L129 ANSWER 2 OF 10 HCAPLUS

ACCESSION NUMBER: 1997:343826 HCAPLUS
DOCUMENT NUMBER: 127:100328
TITLE: The chemistry of peroxovanadium species in **aqueous solutions.** Structure and reactivity of a neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calculations and kinetic results
AUTHOR(S): Conte, Valeria; Di Furia, Fulvio; Moro, Stefano
CORPORATE SOURCE: Universita di Padova, Centro CNR di Studio sui Meccanismi di Reazioni Organiche, Dipartimento di Chimica Organica, via Marzolo 1, Padua, 35131, Italy
SOURCE: Journal of Molecular Catalysis A: Chemical (1997), 120(1-3), 93-99
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

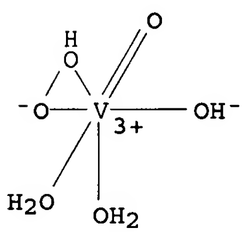
AB The addition of hydrogen peroxide to vanadium (V) precursors in **aqueous** acidic **solns.** leads to the formation of a cationic monoperoxospecies $[VO(O_2)]^+$ and an anionic diperoxocomplex $[VO(O_2)_2]^-$, depending on the pH and on the excess of H_2O_2. The latter may undergo protonation to form the neutral complex $[HVO(O_2)_2]$. 51V-NMR data and ab initio calcns. suggest that the

neutral complex is formed via protonation of a peroxide oxygen and that in such a species, as well as in the other two peroxovanadium derivs., the usual η2 arrangement of the peroxo groups is maintained. The comparison of reactivity data of the three complexes in the self-decomposition reaction and in the oxidation of uracil, indicates that the neutral diperoxocomplex exhibits an oxidizing power considerably larger than that of the other two peroxovanadium species.

IT **191921-45-6**
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(chemical of peroxovanadium species in **aqueous solns** and structure and reactivity of neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calcns. and kinetic results)

RN 191921-45-6 HCAPLUS

CN Vanadium(1+), diaqua(hydroperoxy)hydroxyoxo-, (OC-6-34)- (9CI) (CA INDEX NAME)



CC 67-3 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 65, 77

ST chem peroxo vanadium species **aq soln**; reactivity neutral diperoxo vanadium complex; NMR neutral diperoxo vanadium complex; ab initio neutral diperoxo vanadium complex; kinetics reaction neutral diperoxo vanadium complex

IT Decomposition
Decomposition kinetics
Molecular structure
Protonation
(chemical of peroxovanadium species in **aqueous solns** and structure and reactivity of neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calcns. and kinetic results)

IT Oxidation
Oxidation kinetics
(of uracil; chemical of peroxovanadium species in **aqueous solns** and structure and reactivity of neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calcns. and kinetic results)

IT 129835-89-8 191233-61-1 191921-44-5 **191921-45-6** **191921-46-7** 192006-22-7 192006-23-8
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(chemical of peroxovanadium species in **aqueous solns** and structure and reactivity of neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calcns. and kinetic results)

IT 7722-84-1, Hydrogen peroxide, reactions 7803-55-6, Ammonium

vanadate
RL: RCT (Reactant); RACT (Reactant or reagent)
(chemical of peroxovanadium species in **aqueous solns** and structure and reactivity of neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calcns. and kinetic results)

IT 66-22-8, Uracil, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation of; chemical of peroxovanadium species in **aqueous solns** and structure and reactivity of neutral diperoxovanadium complex as provided by 51V-NMR data, ab initio calcns. and kinetic results)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L129 ANSWER 3 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:251111 HCAPLUS
DOCUMENT NUMBER: 126:240577
TITLE: Sweetening hydrocarbons such as sour natural gas using solutions containing OCl- and HO2-
INVENTOR(S): Sweeney, Charles Timothy
PATENT ASSIGNEE(S): Sweeney, Charles Timothy, USA
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9706875	A1	19970227	WO 1996-US13339		19960814
W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, EE, FI, GE, HU, IL, IS, JP, KP, KR, LK, LR, LT, MD, MG, MN, MX, NO, NZ, PL, PT, RO, SG, SI, SK, TR, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
US 5667760	A	19970916	US 1995-515391		19950815
AU 9667776	A1	19970312	AU 1996-67776		19960814
PRIORITY APPLN. INFO.:			US 1995-515391	A	19950815
			WO 1996-US13339	W	19960814

AB Sour natural gas, containing H2S and organic sulfide contaminants, is contacted with a sweetening composition comprising an **aqueous solution** of a substantially equimolar mixture of OCl- and HO2

(preferably NaOCl and NaOOH) for a time sufficient to oxidize the sulfides to an odorless form. The solution has a pH of 9.0-10.5 and an oxidation normality of 0.001-0.1. The solution may be produced by mixing Cl2 into a dilute **aqueous solution** of NaOH at about pH 10.5 until the pH reaches a level of .apprx.9.5-10.5, or produced electrochem. in a diaphragm cell having a bipolar electrode in the same compartment as the anode, collecting the effluent gas from the cell and absorbing said effluent gas into a dilute **aqueous solution** of NaOH at about pH 9.5-10.5. The treatment may be run as an adjunct to a metal chelate redox treatment to improve the oxidation by the redox catalyst and to improve the catalyst regeneration. The treatment may be run in batch, in a scrubbing tower, or in-line in a flowing gas stream with solids removal provided.

IT **25277-93-4**, Sodium peroxide (Na(O2H))
RL: RCT (Reactant); RACT (Reactant or reagent)
(sweetening hydrocarbons such as sour natural gas using **solns.** containing OCl- and HO2-)

RN 25277-93-4 HCAPLUS

CN Sodium peroxide (Na(O2H)) (9CI) (CA INDEX NAME)

Na—O—OH

IC ICM B01D053-52

CC 51-4 (Fossil Fuels, Derivatives, and Related Products)

IT 1310-73-2, Sodium hydroxide (NaOH), reactions 7681-52-9, Sodium hypochlorite 7782-50-5, Chlorine, reactions **25277-93-4**, Sodium peroxide (Na(O2H))
RL: RCT (Reactant); RACT (Reactant or reagent)
(sweetening hydrocarbons such as sour natural gas using **solns.** containing OCl- and HO2-)

L129 ANSWER 4 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:308159 HCAPLUS
DOCUMENT NUMBER: 124:353935
TITLE: Heat effects occurring during the reactions between gaseous chlorine and strong aqueous bases
AUTHOR(S): Dorko, Earnest A.; Moler, Jeffrey L.; Lepp, Michael A.
CORPORATE SOURCE: Phillips Laboratory, Lasers and Imaging Directorate (PL/LIDB), Kirtland AFB, NM, 87117-5776, USA
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (1996), 2702(Gas and Chemical Lasers), 349-356
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Expts. were conducted in order to determine the heat effects which accompany the reactions between gaseous chlorine and strong, concentrated **aqueous** base **solns.** The bases used were potassium hydroxide and potassium hydroperoxide. Solution concns. ranged up to 7 M. Chlorine gas was bubbled into the base solution which was thermally isolated from the surroundings in a Dewar vessel. From the exptl. data, enthalpies of reaction and enthalpies of formation for the

concentrated basic solns. were calculated
IT 23594-86-7, Potassium hydroperoxide
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(heats of reaction and formation for gaseous chlorine and concentrated **solns.** of potassium hydroxide and potassium hydroperoxide)
RN 23594-86-7 HCAPLUS
CN Potassium peroxide (K(O2H)) (9CI) (CA INDEX NAME)

K—O—OH

CC 69-2 (Thermodynamics, Thermochemistry, and Thermal Properties)
Section cross-reference(s): 73
IT 1310-58-3, Potassium hydroxide, properties 7782-50-5, Chlorine, properties **23594-86-7**, Potassium hydroperoxide
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(heats of reaction and formation for gaseous chlorine and concentrated **solns.** of potassium hydroxide and potassium hydroperoxide)

L129 ANSWER 5 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:416095 HCAPLUS
DOCUMENT NUMBER: 117:16095
TITLE: Decreasing the concentration of hydroxyl ions in electrochemically generated **aqueous** alkaline peroxide **solutions**
INVENTOR(S): Clifford, Arthur L.; Rogers, Derek J.
PATENT ASSIGNEE(S): H-D Tech Inc., USA
SOURCE: Can. Pat. Appl., 29 pp.
CODEN: CPXXEB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2034058	AA	19911017	CA 1991-2034058	19910111
US 5106464	A	19920421	US 1990-510342	19900416
JP 07096146	A2	19950411	JP 1991-41866	19910307
FI 9101209	A	19911017	FI 1991-1209	19910312
FI 94965	B	19950815		
FI 94965	C	19951127		
AU 9174173	A1	19911017	AU 1991-74173	19910409
AU 635407	B2	19930318		
NO 9101460	A	19911017	NO 1991-1460	199104

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
SE 9101126	A	19911017	SE 1991-1126		19910415
US 5244547	A	19930914	US 1991-717298		19910618
PRIORITY APPLN. INFO.:			US 1990-510342	A	19900416

AB The method consists of partial neutralization of a stabilized solution of alkaline H_2O_2, electrodialysis, and dialysis of the **aqueous solution** The method can be used in the pulp and paper industry.

IT **23594-86-7**, Potassium hydroperoxide
RL: PRP (Properties)
(in decreasing hydroxyl ion concentration in electrochem. generated alkaline peroxide **solns.**)

RN 23594-86-7 HCAPLUS

CN Potassium peroxide (K(O2H)) (9CI) (CA INDEX NAME)

K— O— OH

IC ICM C25B001-30
ICS C25B009-00; C01B015-043; B01D061-46; B01D061-52

CC 72-9 (Electrochemistry)
Section cross-reference(s): 43, 49

IT 10042-76-9, Strontium nitrate 10043-52-4, Calcium chloride, uses 10361-37-2, Barium chloride, uses **23594-86-7**, Potassium hydroperoxide **25277-93-4**, Sodium hydroperoxide
RL: PRP (Properties)
(in decreasing hydroxyl ion concentration in electrochem. generated alkaline peroxide **solns.**)

L129 ANSWER 6 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:45898 HCAPLUS
DOCUMENT NUMBER: 114:45898
TITLE: Electrodialytic water splitting process for the treatment of aqueous electrolytes
INVENTOR(S): Paleologou, Michael; Berry, Richard M.
PATENT ASSIGNEE(S): Pulp and Paper Research Institute of Canada, Can.
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9012637	A2	19901101	WO 1990-CA116	19900409
WO 9012637	A3	19910110		

W: AU, BR, CA, FI, JP, NO, US

RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE

US 5006211	A	19910409	US 1989-340200		19890419
AU 9054057	A1	19901116	AU 1990-54057		19900409
CA 2049941	C	19990112	CA 1990-2049941		19900409
PRIORITY APPLN. INFO.:			US 1989-323756	A2	19890315
			US 1989-340200	A	19890419
			WO 1990-CA116	A	19900409

AB Dealkalization or acidification of **aqueous** salt **solns**. is carried out in a cell comprising an anode, a cathode, and ≥2 compartments between them, defined by a cation permselective membrane and ≥1 pair of bipolar membranes. An **aqueous solution** of a salt is fed to the 1st compartment and water into the second compartment, to contact the anionic side of the bipolar membrane. A d.c. is passed between the anode and cathode for migration of the cation from the first compartment through the cation permselective membrane into the second compartment and to cause splitting of water by the bipolar membrane in the second compartment with the accumulation of hydroxide ions in the compartment. The H ions and the hydroxide are removed from the second compartment. The process is particularly applicable to the dealkalization of monosodium peroxide solns. containing NaOH produced in a H2O2 generator.

IT **25277-93-4P**, Sodium peroxide (Na(O2H))
RL: PREP (Preparation)
(alkaline, from peroxide manufacture, dealkalization or acidification of **aqueous** salt **solns.** containing, by electrodialytic water splitting process)

RN 25277-93-4 HCAPLUS

CN Sodium peroxide (Na(O2H)) (9CI) (CA INDEX NAME)

Na—O—OH

IC ICM B01D061-44
ICS C01D001-38; C01B015-043; D21C009-16; B01D; C01D; C01B; D21C

CC 48-8 (Unit Operations and Processes)
Section cross-reference(s): 49, 60, 61

ST dealkalization **aq** salt **soln**; acidification **aq** salt **soln**; water splitting electrodialysis electrolyte treatment

IT Electrodialysis
(water splitting by, in dealkalization or acidification of **aqueous** salt **solns.**)

IT **25277-93-4P**, Sodium peroxide (Na(O2H))

RL: PREP (Preparation)
(alkaline, from peroxide manufacture, dealkalization or acidification of **aqueous** salt **solns.** containing, by electrodialytic water splitting process)

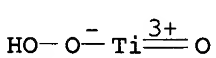
IT 1310-73-2, Sodium hydroxide, uses and miscellaneous 7487-88-9, Magnesium sulfate, uses and miscellaneous
RL: USES (Uses)
(dealkalization or acidification of **aqueous** salt **solns.** containing, by electrodialytic water splitting process)

L129 ANSWER 7 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:584495 HCAPLUS
DOCUMENT NUMBER: 107:184495
TITLE: Characterization of the perhydroxytitanyl(2+) ion in acidic **aqueous solution** . Products and kinetics of its decomposition
AUTHOR(S): Rotzinger, Francois P.; Graetzel, Michael
CORPORATE SOURCE: Inst. Chim. Phys., Ec. Polytech. Fed., Lausanne, CH-1015, Switz.
SOURCE: Inorganic Chemistry (1987), 26(22), 3704-8
CODEN: INOCAJ; ISSN: 0020-1669
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Peroxotitanium(IV) is shown to have the composition Ti(O2)2+. The stability constant KH2O2 = (8.7 ± 1.4) + 103 M-1, determined at 25° and ionic strength = 1.0 (NaClO4), agrees with the literature value and is acid-independent. The oxidation of Ti(O2)2+ by CeIV produces the title complex, TiO(HO2)2+, which was characterized via its decomposition kinetics. TiO2+ and HO2 formed reversibly in an acid-catalyzed and a spontaneous associative substitution process. In a 2nd, fast step, HO2 and TiO(HO2)2+ are transformed irreversibly into Ti(O2)2+, O2, and H2O. The charge of TiO(HO2)2+ was determined from the ionic strength dependence of its acid-catalyzed decay. O does not react with aqueous(III), but it oxidizes TiOH2+. The transition state arising from this reaction is different from and higher in energy than those formed via the decomposition of TiO(HO2)2+.

IT **110487-74-6**
RL: RCT (Reactant); RACT (Reactant or reagent)
(decomposition of, in acidic **solution**, kinetics and mechanism of)

RN 110487-74-6 HCAPLUS
CN Titanium(2+), (hydroperoxy)oxo- (9CI) (CA INDEX NAME)



CC 67-3 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 78

IT Kinetics of decomposition
(of perhydroxytitanyl(2+), in **aqueous** acetic **soln** ., temperature and pH dependence of)

IT Decomposition
(of perhydroxytitanyl(2+), in **aqueous** acetic **solns** .)

IT **110487-74-6**
RL: RCT (Reactant); RACT (Reactant or reagent)

(decomposition of, in acidic **solution**, kinetics and mechanism of)

L129 ANSWER 8 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:430976 HCAPLUS
DOCUMENT NUMBER: 101:30976
TITLE: Pulse radiolysis study of the kinetics and mechanisms of the reactions between manganese(II) complexes and perhydroxyl (HO2)/superoxide (O2-) radicals. 1. Sulfate, formate and pyrophosphate complexes
AUTHOR(S): Cabelli, Diane E.; Bielski, Benon H. J.
CORPORATE SOURCE: Chem. Dep., Brookhaven Natl. Lab., Upton, NY, 11973, USA
SOURCE: Journal of Physical Chemistry (1984), 88(14), 3111-15
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The reactions between Mn2+ and HO2/O2- were studied in the presence of pyrophosphate, sulfate, or formate ligands. Manganous pyrophosphate was oxidized to manganic pyrophosphate by both HO2 and O2- at pH-dependent rates varying from 3 + 105 to 2 + 107 M-1 s-1 in the pH range of 0.1-7.2. The sulfate and formate complexes both reacted to yield the transient species MnO2+/MnOOH2+; MnO2+ eventually disappeared by complex processes while MnOOH2+ reacted with addnl. Mn2+ to form a dinuclear species, MnOOHMn4+, and/or oxidized to Mn3+. Reaction kinetics were established from pH 1 to 7 for these 2 systems.

IT **90342-66-8P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis of manganese(2+) sulfate and formate in **aqueous solns.** during pulse radiolysis, kinetics of)

RN 90342-66-8 HCAPLUS

CN Manganese(2+), (hydroperoxy)- (9CI) (CA INDEX NAME)

$^{3+}$Mn—O^{-}—OH

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Kinetics of oxidation
Oxidation
(of manganese pyrophosphate, sulfate or formate in **aqueous solns.** by perhydroxyl and superoxide radicals during pulse radiolysis)

IT Kinetics, reaction
(of manganese(2+) with perhydroxyl and superoxide radicals in **aqueous solns.** during pulse radiolysis)

IT Radiolysis
(pulsed, of manganese pyrophosphate, sulfate or formate in **aqueous solns.**, kinetics and mechanism of reactions between manganese(2+) and perhydroxyl and superoxide radicals in)

IT 66460-00-2P **90342-66-8P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis of manganese(2+) sulfate and formate in **aqueous solns.** during pulse

radiolysis, kinetics of)

IT 64042-23-5P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis of manganese(2+) sulfate in **aqueous solns.**, kinetics and mechanism of reactions in)

IT 3251-96-5 7785-87-7 13446-44-1 16397-91-4, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with perhydroxyl and superoxide radicals in **aqueous solns.** during pulse radiolysis, kinetics and mechanism of)

IT 3170-83-0 11062-77-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactions of, with manganese(2+) sulfate, formate or pyrophosphate in **aqueous solns.** during pulse radiolysis, kinetics and mechanism of)

L129 ANSWER 9 OF 10 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1979:195536 HCAPLUS
DOCUMENT NUMBER: 90:195536
TITLE: Mechanisms of some radiation-induced oxidations of ferrous ions in **aqueous solutions**
AUTHOR(S): Jayson, G. G.; Swallow, A. J.
CORPORATE SOURCE: Liverpool Polytech., Liverpool, UK
SOURCE: Water Chem. Nucl. React. Syst., Proc. Int. Conf. (1978), Meeting Date 1977, 303-10, 311-13. BNES: London, Engl.
CODEN: 40DPAE
DOCUMENT TYPE: Conference
LANGUAGE: English

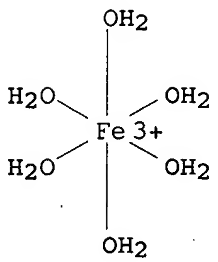
AB Oxidation reactions of Fe2+ in acidified **aqueous solution** initiated by OH, Cl, Cl2-, HO2, RO2 (organic peroxy) and H radicals were investigated by using the pulse radiolysis technique. Some of the radicals gave rise to transient outer-sphere ferric complexes (e.g. Fe3+(H2O)6HO2-) which had distinct absorptions so that rates of formation and decay could be followed. At higher Fe2+ concns. absorption due to ferric-X-ferrous bridge transients could sometimes be observed In the case of HO2 and RO2 radicals the rate consts. of formation and decay of the transients were determined and the temperature dependence investigated. The introduction of SO42- into the outer-sphere and its transfer to the inner-coordination sphere of Fe3+ were studied. The action of organic S compds. on these reactions was considered.

IT **41975-50-2P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis-oxidation of ferrous ion in acidified **aqueous solution**)

RN 41975-50-2 HCAPLUS
CN Iron(3+), hexaaqua-, (OC-6-11)-, salt with hydrogen peroxide (1:1), ion(2+) (9CI) (CA INDEX NAME)

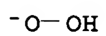
CM 1

CRN 15377-81-8
CMF Fe H12 O6
CCI CCS



CM 2

CRN 14691-59-9
CMF H O2



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic Processes)
IT Oxidation
(radiochem., of ferrous ions in acidified **aqueous solns.**)
IT 15377-81-8P 15552-63-3P 15634-15-8P 15696-19-2P **41975-50-2P** 41975-51-3P 70140-01-1P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis-oxidation of ferrous ion in acidified **aqueous solution**)
IT 42011-97-2P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis-oxidation of ferrous ion in acidified **aqueous solns.**)
IT 3170-83-0 3352-57-6, reactions 12385-13-6, uses and miscellaneous 12595-89-0 22537-15-1, uses and miscellaneous
RL: USES (Uses)
(oxidation of ferrous ion in acidified **aqueous solution** initiated by)
IT 25415-02-5
RL: USES (Uses)
(oxidation of ferrous ion in acidified **aqueous solution** initiated by, pulse-radiolysis)
IT 14808-79-8, uses and miscellaneous
RL: USES (Uses)
(radiation-induced oxidation of ferrous ions in acidified **aq. solution** containing)
IT 15438-31-0, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiation-induced oxidation of, in acidified **aqueous solution**)

L129 ANSWER 10 OF 10 HCAPLUS
ACCESSION NUMBER: 1968:439204 HCAPLUS
DOCUMENT NUMBER: 69:39204
TITLE: Peroxyfluoride complex compounds of uranyl. II. Equilibriums in solution
AUTHOR(S): Gurevich, A. M.; Susorova, N. A.

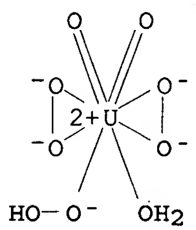
CORPORATE SOURCE: USSR
SOURCE: Radiokhimiya (1968), 10(2), 211-21
CODEN: RADKAU; ISSN: 0033-8311
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Spectroscopic evidence shows that [UO2F4]2- and H2O2 form complexes of the following composition: [(UO2)2(O2)F5]3-, [(UO2)2(O2)2F5]5-, [(UO2)2(O2)3F2]4-, and [(UO2)2(O2)3(OH)F2]5-. Complex formation occurs at pH 5-9.5, through the replacement of the F ligand by O2 groups. The stability consts. of the complexes were calculated, and their mechanism of formation is discussed.

IT **12378-68-6**, Uranate(3-), aquahydroperoxydioxodiperoxy-
RL: PRP (Properties)
(**solution** equilibrium of, in presence of hydrogen peroxide)

RN 12378-68-6 HCAPLUS

CN Uranate(3-), aqua(hydroperoxy)dioxodiperoxy- (9CI) (CA INDEX NAME)



CC 68 (Phase Equilibriums, Chemical Equilibriums, and Solutions)

IT 12345-99-2 12346-00-8 12346-02-0 12346-03-1 **12378-68-6**
, Uranate(3-), aquahydroperoxydioxodiperoxy-
RL: PRP (Properties)
(**solution** equilibrium of, in presence of hydrogen peroxide)

IT 7722-84-1, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(with tetrafluorodioxouranate(2-) in **aqueous soln**
.)

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L131 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:687310 HCAPLUS
DOCUMENT NUMBER: 145:173553
TITLE: Environment-friendly skin antiseptic solution containing sodium hydroperoxide, sodium acetate, sodium citrate, and glycerol
INVENTOR(S): Guo, Baolin
PATENT ASSIGNEE(S): Beijing Jinzihui Technology Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 3 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

CN 1689550	A	20051102	CN 2004-10034036	20040422
PRIORITY APPLN. INFO.:			CN 2004-10034036	20040422

AB The title solution comprises (by weight%) sodium hydroperoxide 0.1-2, sodium acetate 0.3-3, sodium citrate 0.3-3, glycerol 0.1-8, and deionized water as balance. The solution has both skin-moistening and antiseptic effects, has no toxicity, irritation, odor, or degeneration, and is environment-friendly and portable. The solution can be utilized by spraying or daubing onto skins.

IT **25277-93-4**, Sodium hydroperoxide
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(environment-friendly skin antiseptic **solution** containing sodium hydroperoxide, sodium acetate, sodium citrate, and glycerol)

RN 25277-93-4 HCAPLUS

CN Sodium peroxide (Na(O2H)) (9CI) (CA INDEX NAME)

Na—O—OH

IC ICM A61K007-40

CC 62-4 (Essential Oils and Cosmetics)

IT 56-81-5, Glycerol, biological studies 68-04-2, Sodium citrate 127-09-3, Sodium acetate **25277-93-4**, Sodium hydroperoxide
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(environment-friendly skin antiseptic **solution** containing sodium hydroperoxide, sodium acetate, sodium citrate, and glycerol)

L131 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1355019 HCAPLUS
DOCUMENT NUMBER: 145:212975
TITLE: Pronounced catalytic effect of micellar solution of sodium dodecyl sulfate (SDS) for regioselective iodination of aromatic compounds with a sodium iodide/cerium(IV) trihydroxide hydroperoxide system
AUTHOR(S): Firouzabadi, Habib; Iranpoor, Nasser; Garzan, Atefeh
CORPORATE SOURCE: Department of Chemistry, College of Sciences, Shiraz University, Shiraz, 71454, Iran
SOURCE: Advanced Synthesis & Catalysis (2005), 347(15), 1925-1928
CODEN: ASCAF7; ISSN: 1615-4150
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

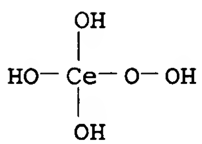
AB Micellar solns. of sodium dodecyl sulfate (SDS) catalyze the regioselective iodination of a wide range of aromatic compds. with sodium iodide in the presence of the easily prepared, water-resistant and recyclable cerium(IV) trihydroxide hydroperoxide, Ce(OH)3O2H, at room temperature By this protocol, structurally diverse aromatic compds.

including benzene and naphthalene were iodinated in good to excellent yields.

IT **93131-81-8P**
RL: RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(catalytic activity of micellar SDS **solution** in regioselective iodination of aromatic compds. with sodium iodide/cerium trihydroxide hydroperoxide system)

RN 93131-81-8 HCAPLUS

CN Cerium hydroxide peroxide (Ce(OH)3(O2H)), (T-4)- (7CI, 9CI) (CA INDEX NAME)



CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 25

IT **93131-81-8P**
RL: RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(catalytic activity of micellar SDS **solution** in regioselective iodination of aromatic compds. with sodium iodide/cerium trihydroxide hydroperoxide system)

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L131 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1132948 HCAPLUS
DOCUMENT NUMBER: 143:391175
TITLE: Metal oxide peroxide films for adhesive compositions coated on microparticle substrates
INVENTOR(S): Andrews, John W.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005234178	A1	20051020	US 2004-826565	20040416
WO 2005118694	A2	20051215	WO 2005-US12620	20050413
WO 2005118694	A3	20061026		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,

MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC,
NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2004-826565 A 20040416

AB Adhesive coating compns. containing a metal peroxide (of group II and III metals) are used to produce clear colorless adhesive coatings on substrates, particularly micro-particulates. The nanoparticle coatings are chemical-active and function at a high level of efficiency due to the high total surface area of the micro particulate substrate.

IT **866890-99-5**, Hafnium oxide peroxide
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(**solns.**; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

RN 866890-99-5 HCAPLUS

CN Hafnium oxide peroxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
HO2	x	14691-59-9
Hf	x	7440-58-6

IC ICM C08K003-08

INCL 524439000; 428402000; 428702000; 428332000; 428403000

CC 57-2 (Ceramics)
Section cross-reference(s): 38, 67

IT **866890-99-5**, Hafnium oxide peroxide **866891-00-1**, Zirconium oxide peroxide **866891-01-2**, Vanadium oxide peroxide **866891-02-3**, Tin oxide peroxide **866891-03-4**, Selenium oxide peroxide **866891-04-5**, Platinum oxide peroxide **866891-05-6**, Yttrium oxide peroxide **866891-06-7**, Lanthanum oxide peroxide **866891-07-8**, Scandium oxide peroxide **866891-08-9**, Aluminum oxide peroxide **866891-09-0**, Iron oxide peroxide **866891-10-3**, Titanium oxide peroxide
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(**solns.**; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

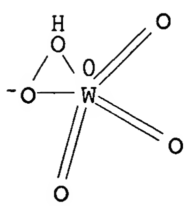
L131 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:63560 HCAPLUS
DOCUMENT NUMBER: 140:349539
TITLE: Oxygen-17 NMR study of aqueous peroxotungstates
AUTHOR(S): Howarth, Oliver W.
CORPORATE SOURCE: Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK
SOURCE: Dalton Transactions (2004), (3), 476-481
CODEN: DTARAF; ISSN: 1477-9226

PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Aqueous peroxotungstates were studied from pH 0.5 to 9.0, over a range of peroxide concns. Although equilibrium are not always established, many anions can be identified by 17O NMR because the ratio of δO(W anion)/δO(known Mo anion) is consistently 79 ± 3%. They are [WO3(HO2)]-, [WO(OH)(O2)2]-, [WO(OH2)(O2)2]0, [W2O3(O2)4]2-, [W2O3(OH)(O2)4]3-, [W4O12(O2)2]4-, [W7O23(O2)]6- and [W7O22(O2)2]6-. Their pKa values, where measurable, are .apprx.2 units lower than the corresponding peroxomolybdates, e.g. 0.0 for [WO(OH2)(O2)2]0 and 8.0 for [W2O3(O2)4]2-. Other peroxotungstate species are also present but can only be broadly identified. These include Keggin structures with relatively low peroxo content, and a very unsym. anion appearing at pH .apprx.7 that bears no obvious structural relation to any species previously reported. The main product from the reaction of powdered W metal with 30% aqueous peroxide is provisionally identified as the sym. anion [W6O13(OH)2(OH2)2(O2)5]2-, although other minor species are also formed, probably having fewer peroxo substituents.

IT **680575-83-1**
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(formation in **solution** and 17O NMR of)
RN 680575-83-1 HCAPLUS
CN Tungstate(1-), (hydroperoxy-κO,κO')trioxo- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 68, 77
IT 74273-21-5 144423-96-1 680575-78-4 680575-79-5 680575-81-9 680575-82-0 **680575-83-1**
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(formation in **solution** and 17O NMR of)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

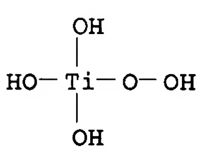
ACCESSION NUMBER: 2000:19295 HCAPLUS
DOCUMENT NUMBER: 132:86771
TITLE: Source solution and method for forming ferroelectric film, and ferroelectric film itself
INVENTOR(S): Maki, Kazumasa; Soyama, Nobuyuki; Mori, Akira; Kageyama, Kensuke; Matsuura, Masaya; Ogi, Katsumi
PATENT ASSIGNEE(S): Mitsubishi Materials Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000001396	A2	20000107	JP 1998-167120	19980615

PRIORITY APPLN. INFO.: JP 1998-167120 19980615

AB A source solution for forming a composite oxide ferroelec. film containing Ti and/or Zr comprises a Ti and/or Zr compound (and/or its partially hydrolyzed or condensation product) and a Ti and/or Zr oxygen complex such as Ti(OOH)(OH)3. A method for forming a ferroelec. film by coating with the above solution is also described. The ferroelec. film formed by the above method has a uniform surface morphol. and a uniform grain size.
IT **13598-71-5**
RL: NUU (Other use, unclassified); USES (Uses)
(source **solution** and method for forming ferroelec. film, and ferroelec. film itself)
RN 13598-71-5 HCAPLUS
CN Titanium hydroxide peroxide (Ti(OH)3(O2H)), (T-4)- (9CI) (CA INDEX NAME)



IC ICM C30B029-22
ICS H01B003-00; H01B003-12
CC 76-8 (Electric Phenomena)
IT **13598-71-5**
RL: NUU (Other use, unclassified); USES (Uses)
(source **solution** and method for forming ferroelec. film, and ferroelec. film itself)

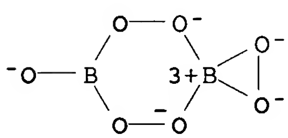
L131 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:329205 HCAPLUS
DOCUMENT NUMBER: 120:329205
TITLE: Wear mechanism of Cr2O3 coating in inorganic salt solutions
AUTHOR(S): Wei, Jianjun; Xue, Qunji
CORPORATE SOURCE: Lanzhou Inst. Chem. Phys., Chin. Acad. Sci., Lanzhou, 730000, Peop. Rep. China
SOURCE: Wuji Cailiao Xuebao (1993), 8(1), 105-10
CODEN: WCXUET; ISSN: 1000-324X
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The friction and wear properties of Cr2O3 coatings in inorg. salt

solns. were studied using a block-on-ring tester at ambient conditions. The friction coefficient is ranked from highest to lowest in the order: NaCl, NaNO3, Na2SO4, Na2B2O7, Na3PO4, for Na salt solns.; NaCl, MgCl2, AlCl3, for chloride salt solns. The wear volume of the block is ranked in descending order as follows: NaCl, Na2B2O7, Na3PO4, NaNO3, Na2SO4, for Na salt solns.; NaCl, AlCl3, MgCl2, ZnCl2, for chloride salt solns. The optical micrographs and XPS analyses of the worn surfaces indicate that the wear mechanism of Cr2O3 coating in inorg. salt solns. is a combination of several wear modes involving microfracture, tribochem. and abrasive wear.

IT **155606-94-3**
RL: MSC (Miscellaneous)
(friction and wear of chromia coatings in ag. **solns.** containing)

RN 155606-94-3 HCAPLUS

CN Borate(2-), [bis(hydroperoxy)hydroxyborato(3-)-κOO,κOO']peroxy-, disodium, (T-4)- (9CI) (CA INDEX NAME)



●2 Na+

CC 57-2 (Ceramics)

IT 7446-70-0, Aluminum trichloride, miscellaneous 7601-54-9, Sodium phosphate (Na3PO4) 7631-99-4, Nitric acid sodium salt, miscellaneous 7646-85-7, Zinc dichloride, miscellaneous 7647-14-5, Sodium chloride (NaCl), miscellaneous 7757-82-6, Sodium sulfate (Na2SO4), miscellaneous 7786-30-3, Magnesium dichloride, miscellaneous **155606-94-3**
RL: MSC (Miscellaneous)
(friction and wear of chromia coatings in ag. **solns.** containing)

L131 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1978:57808 HCAPLUS
DOCUMENT NUMBER: 88:57808
TITLE: Study of europium, gadolinium and terbium peroxides
AUTHOR(S): Bogdanov, G. A.; Balyasova, D. P.; Garkushenko, T. L.; Zdeshneva, G. F.; Komarova, N. V.; Selivanova, M. N.
CORPORATE SOURCE: Mosk. Tekst. Inst., Moscow, USSR
SOURCE: Deposited Doc. (1975), VINITI 3708-75, 10 pp. Avail.: VINITI
DOCUMENT TYPE: Report
LANGUAGE: Russian

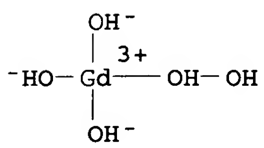
AB Dehydration of Eu, Gd, and Tb hydroxide hydroperoxide hydrates in vacuum did not result in the loss of H2O2 from the compds. The rare earth hydroxide hydroperoxide hydrates decompose in H2O with the loss of H2O2.

IT **65546-23-8**

RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydration and **solution** decomposition of)

RN 65546-23-8 HCAPLUS

CN Gadolinium, (dihydrogen monoperoxide-O)trihydroxy-, hydrate (9CI) (CA INDEX NAME)



●x H_2O

CC 78-9 (Inorganic Chemicals and Reactions)

IT **65546-23-8 65546-24-9 65546-25-0**
65606-52-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydration and **solution** decomposition of)

L131 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1969:507588 HCAPLUS
DOCUMENT NUMBER: 71:107588
TITLE: Pulse radiolysis study of some unstable complexes of iron
AUTHOR(S): Jayson, G. G.; Keene, J. P.; Stirling, D. A.; Swallow, A. J.
CORPORATE SOURCE: Christie Hosp., Manchester, UK
SOURCE: Transactions of the Faraday Society (1969), 65(9), 2453-64
CODEN: TFSOA4; ISSN: 0014-7672
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pulse radiolysis of O-containing solns. of ferrous perchlorate in HClO4 (M) enables the formation and disappearance of a ferric hydroperoxide complex, Fe3+HO2-, to be observed. The rate constant for its formation by reaction of HO2 radicals with free ferrous ions is 2.1 ± 0.4 + 106 M-1 sec.-1 at pH 0-2.1. The complex disappears in a 1st-order reaction with a rate constant independent of pH in the range 0-2.1. It exhibits a broad absorption in the region 280-600 nm., with ε430 nm = 280 ± 30M-1 cm.-1 In the absence of O, a different absorbing species can be seen, attributed to a ferric hydride complex, Fe3+H-. This is formed by the reaction of H atoms with free ferrous ions with k = 7.5 ± 2 + 106M-1 sec.-1 It disappears by reaction with H ions, with k = 1.06 ± 0.1 + 104M-1 sec.-1 Its absorption spectrum exhibits a maximum at 325 nm., ε325 = 650 ± 65M-1 cm.-1

IT **12299-70-6P**
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis of ferrous perchlorate **solns.**)

RN 12299-70-6 HCAPLUS

CN Iron(2+), (hydroperoxy)- (9CI) (CA INDEX NAME)

$^{3+}$Fe—O^{-}—OH

CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)
IT **12299-70-6P** 18257-01-7P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in pulse radiolysis of ferrous perchlorate **solns.**)

L131 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1950:40276 HCAPLUS
DOCUMENT NUMBER: 44:40276
ORIGINAL REFERENCE NO.: 44:7700c-f
TITLE: Combination of metal oxide hydrates with hydrogen peroxide in alkaline solution; influence of the resulting products on the stabilization or the decomposition of these solutions
AUTHOR(S): Pierron, P.
CORPORATE SOURCE: Faculte sci., Lyon, Fr.
SOURCE: Bulletin de la Societe Chimique de France (1950) 291-3
CODEN: BSCFAS; ISSN: 0037-8968
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB cf. C.A. 44, 2355e. Oxidizing power and percentages of metal and H2O were determined on the solid present at the beginning and end of decompns. performed at room temperature and 60-5°, in solns. in 0.5 N, N, and 3 N NaOH, and with initial metal ion concns. of M/125 and M/400 in 100 mL. H2O2. When the solid formed is a hydrated peroxide, the evolution of O2 is retarded. The nascent O probably causes formation in these cases of M(OOH)2, where M = metal, which must then be hydrolyzed to free O2. The retardation is most striking at higher temps. and higher concns. of H2O2. Metals so behaving with the reported solid states are: Mg (MgO2.H2O and MgO2.H2O + 0.5-2.0 Mg(OH)2); Ca and Ba (MO2.H2O alone or mixed with varying ratios of MO2.H2O2 and MO.H2O); and Sn (Sn2O7.3H2O at room temperature, SnO3.2H2O at 60-65°). At room temperature with N NaOH and M/125 Zn forms ZnO2.H2O, and evolution is retarded. At M/400 Zn, the solid is Zn2O3.H2O, and at 60° it is Zn3O5.H2O; as the solid is less hydrated, the retarding is less and there may be acceleration. Acceleration is always observed for oxides that are only partially hydrated and is greatest for the anhydrous oxides, HgO and Ag2O. Metals of this type with the formula of the room-temperature solid and of the 60° solid, resp., are: Ni(NiO2.10NiO.6H2O, 10NiO.5H2O); Mn (MnO2.5MnO.3H2O, MnO2.6MnO.2.2H2O); Pb (PbO2.7PbO.2H2O, PbO2.10PbO.2H2O); Cu (CuO2.3CuO.H2O, 10CuO.2H2O).
IT **866891-14-7**, Tin peroxide
(formation in alkaline H2O2 **solns.**)
RN 866891-14-7 HCAPLUS
CN Tin peroxide (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO2	x	14691-59-9
Sn	x	7440-31-5

CC 6 (Inorganic Chemistry)

IT 14452-57-4, Magnesium peroxide, MgO_2 **866891-14-7**, Tin peroxide
(formation in alkaline H_2O_2 **solns.**)

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L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2005:1132948  HCAPLUS
DOCUMENT NUMBER:          143:391175
ENTRY DATE:               Entered STN:  21 Oct 2005
TITLE:                    Metal oxide peroxide films for adhesive
                          compositions coated on microparticle substrates
INVENTOR(S):              Andrews, John W.
PATENT ASSIGNEE(S):       USA
SOURCE:                   U.S. Pat. Appl. Publ., 16 pp.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
INT. PATENT CLASSIF.:
            MAIN:         C08K003-08
US PATENT CLASSIF.:       524439000; 428402000; 428702000; 428332000;
                          428403000
CLASSIFICATION:           57-2 (Ceramics)
                          Section cross-reference(s): 38, 67
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE       APPLICATION NO.         DATE
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     US 2005234178        A1    20051020   US 2004-826565
                                                                   200404
                                                                   16
                                                 <--
     WO 2005118694        A2    20051215   WO 2005-US12620
                                                                   200504
                                                                   13
     WO 2005118694        A3    20061026
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM,
             KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
             MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
             SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG,
             US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
             DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC,
             NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,
             GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.:                     US 2004-826565       A
                                                                   200404
                                                                   16

PATENT CLASSIFICATION CODES:
 PATENT NO.       CLASS  PATENT FAMILY CLASSIFICATION CODES
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 US 2005234178    ICM    C08K003-08
                  INCL   524439000; 428402000; 428702000; 428332000;
                         428403000
                  IPCI   C08K0003-08 [ICM,7]; C08K0003-00 [ICM,7,C*]
                  IPCR   C08K0003-00 [I,C*]; C08K0003-08 [I,A]
                  NCL    524/439.000; 428/332.000; 428/402.000;
                         428/403.000; 428/702.000
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WO 2005118694 IPCI B32B0005-16 [I,C]; B32B0005-16 [I,A]
IPCR C08K0003-00 [I,C*]; C08K0003-08 [I,A]

ABSTRACT:
Adhesive coating compns. containing a metal peroxide (of group II and III metals) are used to produce clear colorless adhesive coatings on substrates, particularly micro-particulates. The nanoparticle coatings are chemical-active and function at a high level of efficiency due to the high total surface area of the micro particulate substrate.

SUPPL. TERM: titanium oxide peroxide adhesive coating nanoparticle substrate photocatalyst

INDEX TERM: Glass microspheres
ROLE: TEM (Technical or engineered material use); USES (Uses)
(hollow, substrates; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Glass substrates
(metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Peroxides, processes
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(metal-oxy-; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Polycarbonates, processes
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(particles in coating compns.; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Soda-lime glasses
ROLE: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(peroxide-coated, spheres; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Catalysts
(photochem., substrates; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Glass microspheres
ROLE: TEM (Technical or engineered material use); USES (Uses)
(soda-lime, peroxide-coated; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Adhesive films
Bricks
Ceramics
Concrete
Leather
Masonry
Nanoparticles
Pigments, nonbiological
Skin
Textiles

Wood
(substrates; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: Asbestos
Asphalt
Kaolin, uses
Metals, uses
Mica-group minerals, uses
Polymers, uses
Rubber, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(substrates; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 13463-67-7, Titanium dioxide, processes
ROLE: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(amorphous films; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 20338-08-3, Titanium tetrahydroxide
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 1304-76-3, Bismuth oxide (Bi2O3), processes 1306-19-0, Cadmium oxide (CdO), processes 1306-38-3, Cerium oxide (CeO2), processes 1309-37-1, Ferric oxide, processes 1312-43-2, Indium oxide (In2O3) 1313-99-1, Nickel oxide (NiO), processes 1314-13-2, Zinc oxide (ZnO), processes 1314-23-4, Zirconium oxide (ZrO2), processes 1314-35-8, Tungsten oxide (WO3), processes 1314-61-0, Tantalum oxide (Ta2O5) 1317-39-1, Cuprous oxide, processes 7631-86-9, Silica, processes 12030-85-2, Potassium niobium oxide (KNbO3) 12036-10-1, Ruthenium oxide (RuO2) 12047-27-7, Barium titanate (BaTiO3), processes 12060-59-2, Strontium titanate (SrTiO3)
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(nanoparticles in coating compns.; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 9003-01-4D, Polyacrylic acid, derivs.
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(particles in coating compns.; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 54615-43-9, Aluminum peroxide (Al(O2H)3) 866891-11-4 866891-12-5 866891-13-6, Vanadium peroxide 866891-14-7, Tin peroxide 866891-16-9, Selenium peroxide 866891-18-1, Platinum peroxide 866891-20-5 866891-22-7 866891-24-9 866891-26-1, Iron peroxide
ROLE: CPS (Chemical process); PEP (Physical,

engineering or chemical process); PROC (Process)
(precursor; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 866890-99-5, Hafnium oxide peroxide 866891-00-1, Zirconium oxide peroxide 866891-01-2, Vanadium oxide peroxide 866891-02-3, Tin oxide peroxide 866891-03-4, Selenium oxide peroxide 866891-04-5, Platinum oxide peroxide 866891-05-6, Yttrium oxide peroxide 866891-06-7, Lanthanum oxide peroxide 866891-07-8, Scandium oxide peroxide 866891-08-9, Aluminum oxide peroxide 866891-09-0, Iron oxide peroxide 866891-10-3, Titanium oxide peroxide
ROLE: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(solns.; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

INDEX TERM: 471-34-1, Calcium carbonate, uses
ROLE: TEM (Technical or engineered material use); USES (Uses)
(substrates; metal oxide peroxide films for adhesive compns. coated on microparticle substrates)

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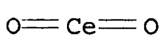
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Cerium oxide (CeO2) (8CI, 9CI)
MF Ce O2
CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

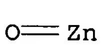
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):42

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Indium oxide (In2O3) (6CI, 8CI, 9CI)
MF In2 O3
CI COM, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Zinc oxide (ZnO) (9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF O Zn
CI COM



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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


L2    43 ANSWERS   REGISTRY  COPYRIGHT 2006 ACS on STN
IN    Tungsten oxide (WO3) (6CI, 7CI, 8CI, 9CI)
MF    O3 W
CI    COM
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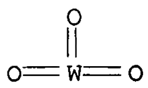

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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


L2    43 ANSWERS   REGISTRY  COPYRIGHT 2006 ACS on STN
IN    Copper oxide (Cu2O) (8CI, 9CI)
MF    Cu2 O
CI    COM
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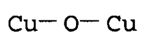

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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


L2    43 ANSWERS   REGISTRY  COPYRIGHT 2006 ACS on STN
IN    2-Propenoic acid, homopolymer (9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF    (C3 H4 O2)x
CI    PMS, COM

      CM    1
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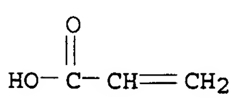

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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


L2    43 ANSWERS   REGISTRY  COPYRIGHT 2006 ACS on STN
IN    Ruthenium oxide (RuO2) (6CI, 8CI, 9CI)
MF    O2 Ru
CI    COM
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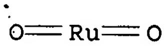


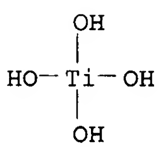
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Strontium titanium oxide (SrTiO3) (8CI, 9CI)
MF O3 Sr Ti
CI COM, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Titanium hydroxide (Ti(OH)4), (T-4)- (9CI)
MF H4 O4 Ti
CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Hafnium oxide peroxide (9CI)
MF H O2 . Hf . O
CI TIS

Component	Ratio
O	x
HO2	x
Hf	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Vanadium oxide peroxide (9CI)
MF H O2 . O . V
CI TIS

Component	Ratio
O	x
HO2	x
V	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Selenium oxide peroxide (9CI)
MF H O2 . O . Se
CI TIS

Component	Ratio
O	x
HO2	x
Se	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Yttrium oxide peroxide (9CI)
MF H O2 . O . Y
CI TIS

Component	Ratio
O	x
HO2	x
Y	x

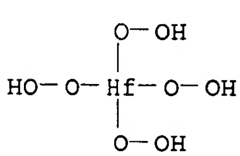
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Scandium oxide peroxide (9CI)
MF H O2 . O . Sc
CI TIS

Component	Ratio
O	x
HO2	x
Sc	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Iron oxide peroxide (9CI)
MF Fe . H O2 . O
CI TIS

Component	Ratio
O	x
HO2	x
Fe	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Hafnium, tetrakis(hydroperoxy)-, (T-4)- (9CI)
MF H4 Hf O8



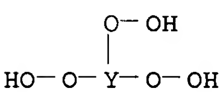
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Vanadium peroxide (9CI)
MF H O2 . V
CI TIS

Component	Ratio
HO2	x
V	x

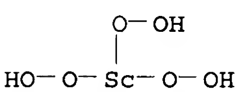
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Selenium peroxide (9CI)
MF H O2 . Se
CI TIS

Component	Ratio
HO2	x
Se	x

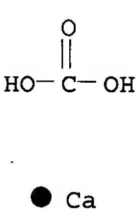
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Yttrium, tris(hydroperoxy)- (9CI)
MF H3 O6 Y



L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Scandium, tris(hydroperoxy)- (9CI)
MF H3 O6 Sc



L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Carbonic acid calcium salt (1:1) (8CI, 9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF C H2 O3 . Ca
CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Cadmium oxide (CdO) (9CI)
MF Cd O
CI COM

Cd=O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Iron oxide (Fe2O3) (8CI, 9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF Fe2 O3
CI COM, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Nickel oxide (NiO) (8CI, 9CI)
MF Ni O
CI COM

Ni=O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Zirconium oxide (ZrO2) (8CI, 9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF O2 Zr
CI COM

O=Zr=O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Tantalum oxide (Ta2O5) (8CI, 9CI)
MF O5 Ta2
CI COM, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Silica (6CI, 7CI, 8CI, 9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF O2 Si
CI COM

O═Si═O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Niobium potassium oxide (NbKO3) (9CI)
MF K . Nb . O
CI COM, TIS

Component	Ratio
O	3
K	1
Nb	1

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Barium titanium oxide (BaTiO3) (8CI, 9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF Ba O3 Ti
CI COM, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

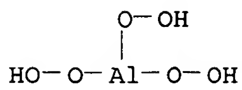
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Titanium oxide (TiO2) (8CI, 9CI)
ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT
MF O2 Ti
CI COM

O═Ti═O

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Aluminum peroxide (Al(O2H)3) (9CI)
MF Al H3 O6



L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Zirconium oxide peroxide (9CI)
MF H O2 . O . Zr
CI TIS

Component	Ratio
O	x
HO2	x
Zr	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Tin oxide peroxide (9CI)
MF H O2 . O . Sn
CI TIS

Component	Ratio
O	x
HO2	x
Sn	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Platinum oxide peroxide (9CI)
MF H O2 . O . Pt
CI TIS

Component	Ratio
O	x
HO2	x
Pt	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Lanthanum oxide peroxide (9CI)
MF H O2 . La . O
CI TIS

Component	Ratio
O	x
HO2	x
La	x

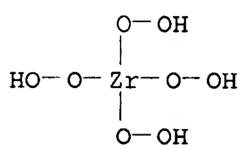
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Aluminum oxide peroxide (9CI)
MF Al . H O2 . O
CI TIS

Component	Ratio
O	x
HO2	x
Al	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Titanium oxide peroxide (9CI)
MF H O2 . O . Ti
CI TIS

Component	Ratio
O	x
HO2	x
Ti	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Zirconium, tetrakis(hydroperoxy)-, (T-4)- (9CI)
MF H4 O8 Zr



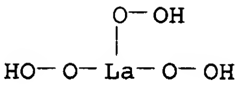
L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Tin peroxide (9CI)
MF H O2 . Sn
CI TIS

Component	Ratio
HO2	x
Sn	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Platinum peroxide (9CI)
MF H O2 . Pt
CI TIS

Component	Ratio
HO2	x
Pt	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Lanthanum, tris(hydroperoxy)- (9CI)
MF H3 La O6



L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Iron peroxide (9CI)
MF Fe . H O2
CI TIS

Component	Ratio
HO2	x
Fe	x

L2 43 ANSWERS REGISTRY COPYRIGHT 2006 ACS on STN
IN Bismuth oxide (Bi2O3) (8CI, 9CI)
MF Bi2 O3
CI COM, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

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